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Multidisciplinary Explanation of the Reading Voice as a Medium: Challenge to Family Media Literacy

ABSTRACT

This study addresses the gaps in knowledge regarding the unique energetics of the reading voice in its role as a medium for the development of stalwart future readers. We take into consideration Maryanne Wolf's reminder about the special need to „foster“ readers due to the fact that reading is „unnatural“. The purpose of this study is to identify the position of reading aloud as a basic media practice in parenting strategies dedicated to cultivating future readers in order to prove that the energetics of the human voice can serve as a communication medium. This study is committed to finding a solution to a specific scientific problem: could the media modality of the environment involving reading aloud from birth be the crucial factor for developing unflinching future readers? The multidisciplinary reading research analyzes the results of a quantitative sociological 32-item survey which assesses the level of awareness and perceptions towards parent-child reading of 71 families in Bulgaria. The analysis focused on parental attitudes towards pre-reading skills before the child learned to read in the conventional sense. From a new perspective, the study looks at the role of the human voice as a medium of unique energetics for family communication. The study demonstrates that the reading voice adds unique energetics to the parent-baby environment by elevating it with non-verbal rhetoric as well as maintaining it in mode of attention and affectionate sound register. These findings can inform decision-making to improve family media literacy on the protection of children's key right to a highly energetic cognitive environment that nurtures avid readers.

KEY WORDS

Media literacy. Family literacy. Reading studies. Reading as communication. Reading aloud. Pre-reading skills. Reader-centric home environment.

1. Introduction

The functional energetics of reading aloud to newborn babies is becoming an increasingly pressing and challenging issue. Research on the matter reveals the exceptional potential of acoustic reading¹, or audio-reading^{2,3}, and the overall developing reading environment as key factors for cultivating unfailing future readers. Reading aloud is becoming an increasingly popular means of communication between parents and their newborn child. A proposition that has already been tested in several of our earlier studies is as follows: babies are readers, albeit mere audio-readers, while still in their mother's womb.⁴⁵ The motivation to engage in new research stems from our interest in the possibilities offered by acoustic reading as a unique medium for shaping future readers in the context of diminishing reader competence and increasingly poor reading habits among students and adults alike.

The rationale for undertaking research on the matter was found in the yet undefined *socio-cultural family responsibility for cultivating unfailing readers and maintaining a reader-centric home environment*. IFLA is one of the first global organizations to assert its policy of promoting family reading. In 2007 it published „Guidelines for Library Services to Babies and Toddlers“, which stated, „*The child's environment contributes significantly to the development of pre-reading skills.*“⁴⁶ The same conclusion was reached by the European Commission's Expert Group on Literacy in 2012, i.e. the proposition that school is responsible for teaching children to read and write is false. Greater responsibility lies with parents and friends, followed by healthcare and, lastly, employers.⁷

In the 20th century the development of reading readiness and skills was considered a priority for pedagogues and care-givers in the education system. Today, attention is increasingly being paid to the role of the family in creating a developing reading environment where the reader can acquire the necessary habits and skills. This shift in focus is not surprising given the developments in medicine, neurology, neurophysiology, and diagnostics during the last nearly 30 years, which have made us increasingly aware of the workings of the brain and its learning capabilities as well as the possibilities for a positive impact on the formation of individuals as future readers. It is not just international literacy reports that highlight the paramount importance of early impact through reading aloud. Evidence supporting this proposition can be found in numerous discoveries in the field of development neurobiology (brain science), learning, and brain activity maturation. Several theoretical models show that the brain has laid the groundwork for self-reading before birth, and that the preparation is particularly intensive from birth to 12 months old.^{8,9} Babies learn in a physical book-mediated information environment by using all

¹ MCLUHAN, M.: *The Gutenberg Galaxy: The Making of Typographic Man*. Toronto : University of Toronto Press, 1962, p. 134.

² See: TSVETKOVA, M.: Reading with the Ears: Radio as a Factor in the Transformation of Reading. In *Viva vox*. Sofia: Univ. press Sv. Kliment Ohridski, 2008, p. 135-148. [online]. [2018-11-25]. Available at: <<https://ssrn.com/abstract=3221923>>.

³ See: MELENTIEVA, Y.: Audioreading: Historical Background and Present Situation. In *Nauchnie i tekhnicheskie biblioteki*, 2008, No. 9, p. 45-51. ISSN 0130-9765.

⁴ See: TSVETKOVA, M.: Reader in the brain. In *Media and social communications*, 2011, No. 11. ISSN 1313-9908. [online]. [2018-11-25]. Available at: <<http://www.media-journal.info/?p=item&aid=162>>.

⁵ See: PACHOVA, D.: *Environment Developing the Reading and Media Functions of the Book: Approaches and Attitudes Towards Early Formation of the Reader*. [Dissertation Thesis]. Sofia : Sofia University St. Kliment Ohridski, 2018. 296 p.

⁶ IFLA: *Guidelines for Library Services to Babies and Toddlers*. The Hague : IFLA Headquarters, 2007, p. 3. [online]. [2018-11-25]. Available at: <www.ifla.org/publications/ifla-professional-reports-100?og=8708>.

⁷ *EU High Level Group of Experts on Literacy. Final Report*. Luxembourg : Publications Office of the European Union, 2012, p. 97-101.

⁸ ABRAMS, D.A. et al.: Neural circuits for mother's voice perception predict social communication abilities in children. In *Proceedings of the National Academy of Sciences*, 2016, Vol. 113, No. 22, p. 6299.

⁹ See also: UCHIDA, M.O. et al.: Effect of mother's voice on neonatal respiratory activity and EEG delta amplitude. In *Developmental Psychobiology*. 2018, Vol. 60, No. 2. p. 140–149. ISSN 1098-2302.

their senses: sight (looking at pictures books), hearing (reading aloud, sound books, rustling book pages), sound uttering (dialogic reading aloud, acoustic interaction), singing (rhymes, songs), grip and touch (tactile books).

A 2017 review identified a key shortcoming of 46 earlier studies on the outcomes of targeted family literacy programmes. This shortcoming is the lack of information on the real engagement in „family communication through reading aloud“ and a clear and documented effect from it.¹⁰ The need to examine home (or family) attitudes towards the earliest possible communication with the youngest children by means of reading has also been reinforced by the insistence of media literacy experts to address the lowest age group: „*It will be important to extend research to under-threes in the future.*“¹¹ Numerous supporters of children's causes have long been drawing public attention to the importance of early literacy but it was not until 2014 that the American Academy of Pediatrics formally endorsed the issue. The academy published a new political statement recommending that pediatricians and politicians promote daily reading aloud from very early childhood – before the age of 1.¹²

Despite the large number of conclusions and proposals with regard to the impact of family environment on the development of unfailing young readers, there is currently *no theoretical justification of the reading voice as a medium* or the possibility to integrate this medium in the reading-pedagogical function of the family. There is a consensus on the statement that reading aloud is one of the major ways of bonding among family members. In recent years experts, educators, and scientists have shared the view that reading aloud should be practiced from the earliest possible moment. In Bulgaria reading aloud from birth lies mainly within the focus of libraries. The current study is the first one to explore the attitudes of Bulgarian parents (mothers and fathers of babies from 0 to 12 months old) towards reading aloud as an opportunity for creating a developing reading environment and laying the groundwork for the early development of pre-reading skills in the baby. We are interested both in the living voice as well as the technical sources of voice – interactive books for kids, audio recordings, and educational programmes (television or online).

We are convinced that there is a need for greater parental involvement and a reduction in parents' passivity towards the development of primary reader culture in children. Today when we demand media literacy from children, we should insist on media literacy for parents first.

2. Methods

2.1. Statement of the Research Issue

The present research is committed to finding a solution to a *specific scientific problem*: Could the modality of the environment involving reading aloud to a baby from birth to age one be among the main factors for developing stalwart future readers? The research problem stems from several preliminary questions which have not been answered definitively to date: Could the unsatisfactory reading quality in children, the difficulties in reading at school age and the refusal to read at all ages be rooted in children's late introduction to reading? In effect, the big question is: Could children acquire reading skills and start preparation for acquiring reading

¹⁰ RIE, S. et al.: Implementation quality of family literacy programmes: a review of literature. In *Review of Education*, 2017, Vol. 5, No. 1, p. 91.

¹¹ SCOTT, F. et al.: Digital Literacies in Early Childhood. In NOBLIT, G. W. (ed.): *Oxford Research Encyclopedia of Education*. USA : Oxford University Press, 2018. [online]. [2018-11-25]. Available at: <<http://oxfordre.com/education/view/10.1093/acrefore/9780190264093.001.0001/acrefore-9780190264093-e-97>>.

¹² MAUGHAN, S.: *American Academy of Pediatrics Backs Reading Aloud from Infancy*. [online]. [2018-11-25]. Available at: <<https://www.publishersweekly.com/pw/by-topic/childrens/childrens-industry-news/article/63008-american-academy-of-pediatrics-backs-reading-aloud-from-infancy.html>>.

maturity before they have learned how to read in the conventional sense? Our efforts are motivated by overcoming the scientific barriers of letter-centricity and book-centricity, which prevent us from acknowledging all parameters and aspects of reading as a mental activity within the framework of oral tradition (reading aloud or reading as listening).

We take into consideration Maryanne Wolf's reminder about the special need for „ostering“ readers due to the fact that reading is unnatural, i.e. it is not an innate but an acquired human trait: „*Young readers do not have a genetically based program for developing reading-brain circuit. Reading-brain circuits are shaped and developed by both natural and environmental factors, including the medium in which reading is acquired and developed.*“¹³ Hence, our *thesis statement* is that the formation of reading reflex and attitude in children depends on the communication environment in which they have been developing before and immediately after birth, and this circumstance should be used to reinforce the family's pedagogical responsibility and place the media function of the reading voice at the centre of early (family) reader pedagogy.

The basic *hypotheses* of the study are two. Firstly, reading aloud has a different impact on the baby as compared to ordinary speech due to the combination of the melody of the natural human voice and the rhythm of the written word reproduced orally. The first assumption is based on the theories of voice of P. Zumthor, E. Husserl, J. Derrida, M. McLuhan, and voice production – the phonation theories of Demosthenes, Hippocrates, Galen, Boethius, Leonardo da Vinci, Andreas Vesalius, Raoul Husson and others. Secondly, it is not the content of the text read (genre or topic) that matters but the reading human voice and its energetics as a medium. This means that any text the parent is reading to themselves (a novel, a textbook, a monograph, a report, etc.) could be read aloud to the baby as long as it is read expressively. The second assumption is based on A. Mehrabian's „pyramid of inconsistent impact“ which illustrates the psychological burden of the variety of expression channels in communication (the „7–38–55% Rule“). The strongest influence in asymmetric personal communication (such as the adult-baby communication) is exerted by the speaker's body language (eyes, mimics, and gestures) – 55%, which is at the bottom of the pyramid; next in terms of significance is the impact of the speaker's voice (tone) – 38%, and last (top of the pyramid) comes the impact of the speech content – 7%.¹⁴

The purpose of this study is to identify the position of reading aloud as a supportive cultural-pedagogical activity in parenting strategies dedicated to cultivating future readers in order to give proof of the energetics of acoustic reading in the period immediately after birth as a pre-requisite for developing sustainable readers.

2.2. Approach

The study has been conducted using an interdisciplinary approach based on the methods of induction, deduction, and scientific data synthesis. The phenomenon of reading aloud to babies has been explored interdisciplinarily by means of analytic-synthetic and critical processing of scientific results in reading theory studies, media studies, bibliopsychology, neuropsychology, cognitive psychology, child psychology, and child pedagogy.

The theoretical basis of this study comprises the views of reading aloud researcher M. Fox who presents this process not only as a way of communication but as an event which has an impact on one's entire life¹⁵; the neurobiological findings of C. Shatz, Professor of Neurobiology of Stanford University on the „windows of opportunity“ and the significance of early experience

¹³ WOLF, M.: *Reader, Come Home: The Reading Brain in a Digital World*. New York : Harper, 2018, p. 7-8.

¹⁴ MEHRABIAN, A.: *Silent messages*. Belmont : Wadsworth Pub, 1971, p. 75-80.

¹⁵ See: FOX, M.: *Reading Magic: Why reading aloud to our children will change their lives forever*. New York : Houghton Mifflin Harcourt, 2008.

in the developing brain¹⁶; the education methodology of M. Ibuka related to the first three years of life¹⁷; research by P. Kuhl on the perception of speech at age 0 to 12 months¹⁸; the work of L.E. Berk on the different stages of cognitive and communication processes in children up to three years old¹⁹; the theory of S. Dehaene on the neurophysiological basis of the reading process from birth²⁰; the works of cognitive neuroscientist and expert on the science of reading M. Wolf²¹; the works of M. Tsvetkova expanding the communication theory of reading, including audio-reading²². We also take into consideration recent debates about familiar theories on chronologically early „reading readiness“ whose ultimate purpose, also shared by UNICEF²³, is maturation of the basic circumstances leading to a non-reader child becoming a reader. For the purposes of the study, a review has been done of extant research on early reading approaches and methods as well as family and home literacy research, including reports of the International Literacy Association, the European Commission (including EPALE), the Family Literacy and Learning Programmes of the UNESCO Institute for Lifelong Learning, *Words Alive's* Family Literacy and Read Aloud Programmes, the Barbara Bush Foundation for Family Literacy, etc.

The empirical sociological methods include developing and conducting a targeted survey for Bulgaria using a questionnaire on „Baby in a developing reading environment“. Prior to designing the survey instrument, relevant scientific publications were reviewed, including examining the attitudes of researchers and educators from different countries towards early reading, with a view to deciding on the best approach to examining attitudes towards new forms of acoustic reading. Based on the findings from the literature, appropriate questions were devised, revealing an overall response towards early home reading practices on the part of parents.

2.3 Concept and Terms

The study uses the communication definition of reading: a complex mediated process built on the individual's readiness for visual, tactile or auditory stimuli from written messages, which is essential for the formation of intellectual, social and emotional experience in the recipient of these messages. In our research scope, reading includes not only letter-based reading but also „tactile reading“, „audio-reading“, and „audio-visual reading“. ^{24, 25} The term „read out loud“ or „reading aloud“ is not identical with the term „read-aloud“. The subject of our study is acoustic reading or reading aloud to babies by adults rather than the oral reading of a text by the reader themselves. The term „reader-reciter“ denotes the person who reads aloud. The category „babies“ comprises children from birth to 12 months old. It determines the books

¹⁶ See: SHATZ, C.J.: The Developing Brain. In *Scientific American*, 1992, Vol. 267, No. 3, p. 60-67. ISSN 0036-8733.

¹⁷ See: IBUKA, M.: *Kindergarten is too late*. London : Souvenir Press, 1977.

¹⁸ KUHL, P.K. et al.: Infants' brain responses to speech suggest Analysis by Synthesis. In *Proceedings of the National Academy of Sciences*, 2014, Vol. 111, No. 31, p. 11238–11245. ISSN 1091-6490.

¹⁹ BERK, L. E.: *Development Through the Lifespan*. Hoboken : Pearson Education, 2018, p. 201-202.

²⁰ See: DEHAENE, S.: *Reading in the Brain: The New Science of How we Read*. New York : Penguin Book, 2009.

²¹ See: WOLF, M.: *Proust and the Squid: The Story and Science of the Reading Brain*. London : Icon Books, 2010.

²² See: TSVETKOVA, M.: Audiobook and audioreading: Between benefit and risk. In *LiterNet*, 2011, Vol. 139, No. 6. [online]. [2018-11-25]. Available at: <<http://litenet.bg/publish3/mtzvetrova/audiokniga.htm>>.

²³ UNICEF: *School readiness: a conceptual framework*. New York : United Nations Children's Fund, 2012, p. 14-15.

²⁴ See: FEDOROV, A. et al.: Media and audiovisual literacy to empowerment and social change. In *Opcion*, 2017, Vol. 33, No. 82, p. 160-189. ISSN 1012-1587.

²⁵ See: TSVETKOVA, M.: Compromise duality between mobile reading and stationary reading: An analysis of culture of the media nomadism. In *Media Education (Mediaobrazovanie)*, 2018, Vol. 56, No. 1, p. 159-167. ISSN 1994-4160.

discussed and recommended by us for babies from birth to age one. The term „pre-reader“ denotes babies who can perceive the reading voice. We examine them as „future readers“ in line with the popular librarian's term that promotes reading to babies and draws young mothers to libraries by means of non-standard materials and advice on early childhood reading.

We operate with the term „family literacy“, which was introduced in 1982 by Denny Taylor to denote the relationship between parents and their youngest children based on text. We believe it is important to note that when defining „family literacy“ as „a part of the very fabric of family life“²⁶, the author also means the books parents read aloud to their children who take the role of listeners. Despite the ambition of modern research paradigms to declare this view old-fashioned and shift the focus of attention in family literacy towards the technological metamorphoses of communications and multimodal literacy, including removing reading aloud from broad home literacy²⁷, we are convinced that during the earliest period from birth to the first year of the child reading aloud should regain lost ground and be maintained as an axiom due to its fundamental role in cognitive development.

3. Results

We have conducted a survey on „Baby in a developing reading environment“ for Bulgaria. The emphasis is on reading aloud as a key activity for the formation of a future reader in the „parent-baby“ contact zone during the first year after birth. We refer to this period of developing a future reader as „pre-reader“. The questions address the second of the three stages of pre-reading, which are also essential stages in human cognitive development: first stage – pre-natal (unborn), second stage – from 0 to 12 months old (baby), and third stage – from 1 to 3 years old (child). The reasoning for the above structure of the preparatory reading cycle is the theoretical-empirical setup that the process of perceiving the modalities of text read aloud begins before birth and is instrumental in programming the future reader during the first three years of life.

The study sets out to reveal, analyze and summarize the home practice of „reading aloud“ in Bulgaria and the effects parents observe in babies from 0 to 12 months old. The survey covers a total of 71 parents (aged 19 to 44, 97% women and 3% men). The method used is a survey by means of a specially designed non-standardized questionnaire with 32 questions, 6 of which are demographic. 24 of the questions are limited to a single answer (indicator: n = 71). 8 questions allow multiple answers, and several questions provide pre-text options in which respondents choose the most appropriate combination of answers for each particular question (indicator: n ≠ 71). 17 of the questions are mandatory and questionnaires without answers to them have been considered invalid. 6% of the questionnaires were completed on study and the remaining 94% were filled out electronically. The results were collected between 27th June 2016 and 1st January 2017. The data obtained in the research was analyzed using SPSS. We acknowledge the possibility of data distortion due to the Internet platform used for filling out the questionnaires. All online questionnaires were completed under the supervision of the researcher. The online questionnaire contained pre-programmed notes that did not allow skipping mandatory questions. We do not claim that the study is representative. All submitted data and conclusions were made based on the questionnaires filled out by the respondents.

The following assumptions were made with regard to the survey: (a) The babies' mental development is normal for their age; (b) The babies see and hear without difficulty; (c) The mothers' course of pregnancy occurred without complications. The situation examined does

²⁶ AYLOR, D.: *Family literacy: Young children learning to read and write*. Portsmouth : Heinemann, 1983, p. 87.

²⁷ See: HARRISON, E., MCTAVISH, M.: „i'Babies: Infants' and toddlers" emergent language and literacy in a digital culture of iDevices. In *Journal of Early Childhood Literacy*, 2018, Vol. 18, No. 2, p. 163-188. ISSN 1741-2919.

not involve the component of „preliminary organized training for parents“. Respondents were not subject to external intervention but represented a natural, unbiased and spontaneous parenting community.

3.1 Participants in the process of reading aloud in the baby's environment

Reading aloud is a way of communication that could start even before birth. Out of all the participants in the survey, 78% pointed out that the mother's environment entailed reading aloud during her pregnancy. This process is of varying intensity – 20% stated, „Yes, every day“, 24% chose the answer „Yes, several times a week“, while 22% of the parents questioned had no observations. The largest group of parents read aloud to their child post-birth several times a week (48%). Only 10% of the participants stated they do not read aloud to their baby. The results obtained demonstrate that parents are more likely to read to the baby after birth rather than before. The number of people who read several times a month remains the same before and after the child was born. A positive trend is that the number of parents who do not read aloud decreases after birth.

Different people in the baby's environment read aloud to it. The largest group is comprised of parents – 89%. A grandmother/grandfather also participates in the process (as stated by 23% of the respondents), and a brother/sister (10%). The option „relative (member of the extended family) “ was selected by 6% of the people questioned while „someone from our friend circle“ was chosen only by 3% of the participants. 6% of all parents had no observations. There is only one respondent who said that a babysitter reads aloud to the child. The results obtained clearly outline the trend that parents are the main readers-reciters to their babies. The second most active participants in the process are grandmothers and grandfathers.

3.2 Parameters of reading aloud to the baby

These questions explore the general parameters of the practices applied by the participants when reading aloud to their babies.

Beginning of the reading aloud practice. 67% of all people questioned started reading aloud when the baby was 0-3 months old. The next group in size are participants who began reading aloud to the baby in the period 4-6 months (23%). The remaining 10% read aloud after the baby turned 6 months. This is a positive trend which shows that reading aloud is one of the earliest means of strengthening the parent-child bond after birth.

Content of the read aloud materials. Participants in the survey read aloud different materials to their babies. The largest number of parents read aloud prose works for children (66%) and children's poetry (62%). The number of participants who chose any of the other answers is considerably smaller: „Prose (which parents read for themselves) “ is read aloud by 23% of the respondents. 3% less (20%) read „Articles from newspapers and magazines, including online (that I read for myself)“. 11% of the respondents chose „Study materials (that I read for myself)“ and another 11% – „Specialized or scientific journals (that I read for myself)“. The smallest number of the people questioned, 4% each, chose the following answers, „Poetry (that I read for myself)“ and „Internet forums“. The results obtained clearly show that parents prefer to read children's books in rhymes and prose. A positive trend is that parents also read aloud other types of text, including specialized and scientific publications. This shows that parents and the rest of the people reading aloud in the baby's environment are interested in broadening the youngest family member's horizons.

Selection of the read aloud materials. The largest number of respondents (73%) pointed out that they select the material to be read aloud from what is available at home. 35% of the participants in the survey stated that they read the same books they were read to in their childhood. An equal number of respondents select the works by choosing between „Shared by friends and acquaintances“ (17%) and „Random picks on the Internet“ (15%). 13% of the participants consulted librarians from the children’s section. Only one respondent sought specialist advice on what to read. We can only assume that buying books and borrowing them from the library involves discussion with the relevant specialists. The general trend outlined by the answers to this question is that the respondents read what is available at home or what they remember being read to in their childhood. Such an approach is understandable because it involves the easiest and most pleasant to read aloud material that evokes positive memories from the parents’ early childhood years. Emphasis is placed on the refusal to consult experts in the field, even librarians and booksellers.

Reading aloud rituals. The reading ritual is an important aspect of developing babies’ positive attitude as future readers. 39% of the people questioned do not have a reading ritual. 28% of the respondents answered they hug the baby and read aloud to it, or create a quiet and relaxed atmosphere to read to the baby. 23% place the baby in a sitting/lying position and begin reading. Only 11% prepare the baby for sleep and then start reading. The answers given make it clear that the respondents aim to provide a relaxed and cosy atmosphere as well as suitable posture and sound background to support reading.

3.3 Effects from reading aloud in person

Reaction of the baby during ongoing reading as compared to when reading stops. Parents observe different reactions after starting to read aloud to their babies, and when they stop reading. We have compared these reactions by means of a crosstab analysis (*Table 1*). When choosing the type of reaction, multiple answers are possible. The reactions were evaluated subjectively on the basis of the reactions the baby demonstrates towards all other aspects of life. According to the results obtained, babies show delight and become more active when they are being read aloud to. When the process ceases, the largest number of parents (43%) do not observe any particular reaction. None of them chose the option „It cries“. Only 1% of the babies show delight when reading aloud stops. It is noteworthy that an equal number of participants chose the option „The baby starts whining“ during the process and upon its completion. The overall observation is that reading aloud elicits positive emotions from the baby, which are expressed most naturally.

Baby’s reaction	During reading aloud	When reading aloud stops
It calms down	28%	8%
It shows delight	39%	1%
It becomes more active	31%	21%
Its physical activity decreases	25%	4%
It starts whining	11%	11%
It cries	—	—
No reaction observed	11%	43%

SCHEME 1: *Baby’s reaction during reading aloud as compared to when reading stops at the discretion of the parent (n = 71)*

Source: own processing

Reaction of the baby based on the type of read aloud text. Reading familiar texts is a frequent practice that reinforces already developed models of speech. Only 34% of the parents believe that the baby demonstrates different reactions to different literary works. Most of the parents do not notice particular differences in their babies' reactions regardless of whether they read the same or different texts.

Attention towards the illustrated material. Pointing at the illustrations while reading aloud, alongside with interaction between text and pictures is practiced by a total of 38% of the parents. The number of respondents who draw the baby's attention to the illustrations is significantly larger (83%). 70% of all parents explain the relationship between the text being read and the illustrations. The results show that based on its age and interest towards the object placed in front of it, the baby focuses its attention with a varying duration on the illustrations that are an additional element to the text. 80% of the respondents stated that the baby focuses or rather focuses its attention on the illustrations.

Attention to written text sources in the baby's environment. Of all the participants, 62% stated definitively that the baby demonstrates interest in the text source read from, regardless of whether it is a book, newspaper, magazine, sheet of paper, tablet, smartphone, computer or other. Only 9% answered that the babies rather or definitively show no interest in the source they are being read to from. Babies are curious and learn about the world around them with increased intensity. Results show that babies demonstrate a marked interest towards sources of written text in their environment regardless of whether a person reads aloud to the babies or reads for themselves.

Free access to sources of written text is an important part of developing a positive reading environment. If the baby is prohibited from „reading“ from particular sources, this would hinder the development of reader habits at a later age. Free access to sources of written text has been provided to 60% of the babies. Only 10% of all parents chose the option „I do not think it is necessary“ while the remaining 30% stated „No“.

Books as play items are widely popular and all participants offer such toys to their babies. The only difference is that parents offer them at different periods of the babies' development. The largest number of parents provide books as play items to their babies at the age of 4-6 months (46%). 31% of the respondents indicated age 0-3 months. 20% offer their baby books as play items at age 7-9 months. The lowest share (3%) is made up of those who chose the „10-12 months“ response. A positive trend is that parents offer books as play items from a very early age. This is an important element in developing reader environment.

3.4 Technical sources of voice

We are equally interested in the technical sources of voice in the babies' environment. One of these sources is audio recordings of fairy tales. Most parents (59%) do not play audio recordings to their babies. The rest do so with varying frequency. Of the parents who play audio recordings of fairy tales, most stated that the baby shows delight (14%) or the baby calms down (13%). Educational programmes on television or online are another potential source of text read aloud to babies. 60% of all respondents do not play similar programmes. 18% of the participants use them as an entertainment tool on a daily basis while 11% do so several times a week. Out of a total of 41% of parents who play educational programmes, 21% stated that the baby shows delight and another 21% – that it calms down. 13% stated that they notice a decrease in physical activity. Results show that over a half of the respondents do not use technical sources of voice targeted at the baby. Parents who do not play audio recordings of fairy tales do not play educational television or online programmes either. Of the two sources, educational programmes are preferred for daily entertainment.

Using crosstab analysis, we have compared the frequency of reading aloud and the preference for technical sources of voice (Table 2 – 3). The largest share of respondents (29%) read aloud to their babies several times a week and do not play children’s audio recordings. The largest percentage of respondents (27%) read aloud several times a week but never play educational programmes. Only 1% read aloud every day and play educational (television and online) programmes.

Frequency		Children’s audio recordings				
		Every day	Several times a week	Several times a month	Once a month or more rarely	Never
Reading aloud	Every day	3%	3%	3%	1%	7%
	Several times a week	1%	7%	6%	4%	29%
	Several times a month	1%	1%	1%	4%	8%
	Once a month or more rarely	—	—	—	1%	7%
	Never	—	—	3%	—	7%

SCHEME 2: Reading aloud or listening to audio recordings (n = 71)

Source: own processing

Frequency		Educational programmes (television or online)				
		Every day	Several times a week	Several times a month	Once a month or more rarely	Never
Reading aloud	Every day	1%	—%	1%	—	14%
	Several times a week	8%	7%	1%	4%	27%
	Several times a month	3%	4%	1%	—	8%
	Once a month or more rarely	6%	—	3%	—	—
	Never	—	—	—	—	10%

SCHEME 3: Reading aloud or watching television or online programmes (n = 71)

Source: own processing

3.5 Comparative analysis of babies’ reactions to different sources of acoustic reading

Babies respond differently to the different sources of acoustic reading. We have carried out a comparative analysis between the various stimuli and the responses elicited by acoustic reading and a reading voice from a technical source (Figure 1). It can be seen that the babies’ reactions depend on the type of stimuli. It needs to be highlighted that the number of parents using audio recordings and educational programmes to entertain their babies is significantly lower than the ones who read aloud to them in person. The overall observation is that regardless of the source, babies respond happily in all acoustic reading modalities.

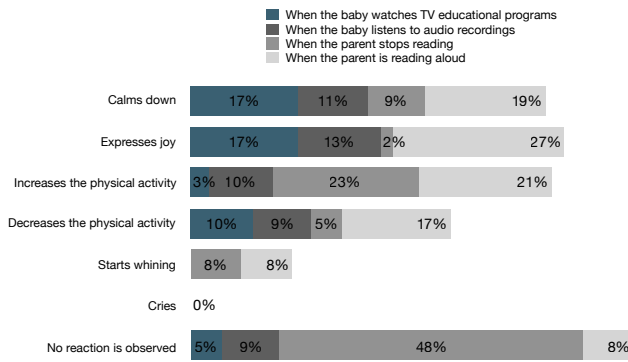


CHART 1: Reactions to sources of read aloud text (% ,percentage of responses)

Source: own processing

4. Discussion

The questionnaire survey presented revealed the multi-dimensionality of acoustic reading in terms of the person who does it, specifics of their voice, selection of reading material, interaction with words and illustrations, and variety of sources of read aloud texts. It has been determined that illustrations have multiple functions during reading aloud as they transform the words into pictures and help the „audio-reader“ (baby) get to know the world in an *integral format* – by simultaneously listening and reading, performing an active role in a communication field between reader-reciter and reader-listener. The multi-functionality of interactive books for kids in which text is augmented by sound, color, and images accessible via mobile applications has also been established.

The results demonstrate the specifics of the Bulgarian reading parent. Several negative and positive trends have emerged. The leading negative trend is that parents believe that reading aloud makes sense only after the child has been born and mostly as its age progresses. A large number of future mothers *do not perceive their unborn child as a „reader-listener“*– 50% of the parents questioned admitted they did not read aloud during pregnancy. However, when the baby was born and during the first 12 months only 10% of the respondents did not apply this method. Another negative trend is that parents *do not seek expert opinion* on the choice of books to read aloud. They do not consult librarians or library psychologists as to the most appropriate reading materials. A positive trend is that parents prefer to read aloud to their children in person instead of using technical substitutes (audio recordings or television). It is a well-acknowledged fact that every baby responds to reading aloud „in a cultured way“ as early as the first year of life.

Although the results of the questionnaire survey cannot be generalized, we believe they are significant enough to draw attention to a new object of research studies, namely the reading voice as a communication medium.

The specific approach of the present study is to promote the body along the line of physiologizing communication as a possible pre-cultural connection to books and reading. By default, the body is a „communication supporter“ of the book insofar as it lays the text in its scope, objectifies it, makes it comparative to it, and arranges both book and text in a common object chain. Reading aloud by the mother is of paramount importance in our case as it lengthens the communicative chain of body–book–voice. It creates conditions for the metonymic pairing of mother and book in which the book acquires the positive characteristics of the mother in a psycho-analytic sense, while reading becomes a part of the child’s experience through the mother’s psychological repertoire of care, caress, and satisfaction.

In order to deduce the advantages of the communication practice of reading aloud hereby referred to as „acoustic reading“, it is first necessary to identify the specifics of the voice that allows it to function as a medium, that is, to have an impact on the recipient and govern the

communication processes among people. Our thesis on the voice as a medium is based on the theories and views of Nicomachus (c. 60–c. 120 AD), Boethius (c. 477–524 AD), I. Kant, J. Herder, E. Husserl, J. Derrida, T. Adorno, H.U. von Balthasar, M. McLuhan, P. Zumthor, B. Felderer, P. Kivy, M. Tiainen, and O. Bulgakowa.

Genealogically and historically voice precedes speech. „For there is no greater path to the soul than through the ear. Therefore when rhythms and modes enter the soul by this path, there can be no doubt that they affect and remold the mind into their own character“, as Boethius (c. 477–524 AD) writes in his treatise „De institutione musica“.²⁸ The voice is the natural medium for transmitting messages, both language (meaningful) or emotional. The phenomenon of sound has a decisive role in meaning – it can exist on its own, amplify or even circumvent speech. This key mediating position between language expression and the phonetic act of sound, between logos and emotion, assigns the human voice a leading role in the pre-verbal period of primitive people and newborn children alike.²⁹

Voice is an aerial extension of the human body. In his research, oral communication expert P. Zumthor treats the voice simultaneously as a *source* of information and a *mediator* between the neurophysiological and cultural aspects of human activity, as a fundamental carrier and out-of-the-body channel of oral speech and oral poetry. Through the body that creates it, the voice gives information about the particular person – in other words, a person „reveals their secrets“ more easily through their voice than through a look or facial expression^{30, 31}.

The voice springs from the bowels of the body and begins its autonomous life as a physiological substrate of speech. The inseparability of the voice as a medium of corporeality from the environment, i.e. from the other media, is the reason why it is easily translatable into other communication languages.³² It can be translated into gesture, mimic, written sign, fire and smoke, an electric impulse or byte all the way to modern intelligent voice control programmes – *Voice Control*, *Google Voice*, etc.

The voice has an important social and symbolic function – it safeguards the value of speech and creates forms of group social connectedness and morale as well as generating and expressing symbols and feelings. When gesture is complemented by voice, the latter becomes the most important source of energy of the ritual act. When feeling and written (recited) word merge with voice, it becomes the organizer of the richest syncretism of the pre-written era – „oralite mixte“.³³

In this mixed reality, the air yields something new – an objectified voice, a voice-medium, an independent voice-body or vocalic body shaped through sound in a different physicality (this is the interpretation offered in „Pygmalion“ by B. Shaw). The voice born inside leaves the body and is realized in space, thus becoming a cultural phenomenon. The voice always seeks the other and becomes a conductor of intersubjectivity.³⁴

The voice as a medium governs the mode of listening. P. Kivy explains that the recipient is conscious of the medium in-between him and his content when the medium „has received the impress of the artist's hand“.³⁵ What the recipient hears is the medium which completely engulfs him: „he is listening to singing“. In the sensual voice emission, the listening mode is transformed into a mode of attention, which means that the primary role is taken by the source

²⁸ See: BOETHIUS, A. M. S.: *Fundamentals of Music*. New Haven : Yale University Press, 1989.

²⁹ See: FELDERER, B.: *Phonorama: Eine Kulturgeschichte der Stimme als Medium*. Berlin : Matthes & Seitz, 2004.

³⁰ See: ZUMTHOR, P.: *Introduction à la poésie orale*. Paris : Editions du Seuil, 1983.

³¹ See: ZUMTHOR, P.: *La lettre et la voix: De la "Litterature" medievale*. Paris : Editions du Seuil, 1987.

³² See: BULGAKOWA, O.: *Golos kak kulturnyj fenomen*. Moskva : Novoe literaturnoe obozrenie, 2015.

³³ See: ZUMTHOR, P.: *La lettre et la voix: De la "Litterature" medievale*. Paris : Editions du Seuil, 1987.

³⁴ See: FELDERER, B.: *Phonorama: Eine Kulturgeschichte der Stimme als Medium*. Berlin : Matthes & Seitz, 2004.

³⁵ KIVY, P.: *Speech, Song, and the Transparency of the Medium: A Note on Operatic Metaphysics*. In *The Journal of Aesthetics and Art Criticism*, 1994, Vol. 52, No. 1, p. 67.

of the voice (the one speaking or singing). The listener's attention determines whether the voice will remain merely physical sound or will work as a medium. However, governing the mode of attention does not depend on the listener's aural competences but on the skill of the source of the voice.³⁶

Just like any body-based sound phenomenon, the reading voice cannot lie. Auditory recognition of sound phenomena is „locked in the mind which, equipped with the criteria of truth, is never misled“, according to Boethius.³⁷ The relationship between subject and object, reader and listener, transcends the psychological state of empathy (*Einführung*). The listener belongs to the other and surrenders to him. The voice as a medium can never be erased or vaporized in pure form.³⁸ According to Balthasar, this reveals the difference between ear and eye – „the open landscape of the eye, where sight is always seeing, and in the open sphere of hearing, where the ear is always hearing“. ^{39, 40} The eye is the organ that makes possession of the world possible, and seeing takes control of it. The ear is the channel of subordination to the world because hearing is involuntary. The listener is in a relation of defenselessness, on the one hand, and of connectedness, on the other.

M. McLuhan provides the same explanation: the ear, the radio, and audio media in general are „hot“ media, i.e. channels that attack directly, without deficits or the need for assistance on the part of the recipient, unlike speech or telephone, which are defined as „cool“ media. The listener is a captive of the stream of sound and perception does not require any effort on his part.⁴¹ Insofar as listener-oriented communication is „hot“, i.e. ancient and natural, it can be concluded that reading aloud as „reading for the other“ is the most direct and richly informative expression rehabilitating the frankness of primary „orality“ and the magical essence of the „world of the ear“.

As P. Zumthor⁴² reminds us, the voice is also a sign of presence. Its function in the unconscious phase of child development naturally does not require auditory competence and is exhausted by presence. Thus reading aloud with its typical sensuality, intonation, and melody becomes evidence of the mother's proximity by psychologically activating the relationship with her and positioning itself as an archetypal need following the psychoanalytic reasoning about the impact of childhood on the mature person.

To summarize, a concise answer to the question of how the voice functions as a medium of reading can be provided as follows:

- by virtue of the natural sound of each object, as explained by Nicomachus (c. 60–c. 120 AD) in his „Manual of Harmonics“;
- by virtue of the music emitted by every moving object and its infusion into the „harmony of spheres“ as described by metaphysicians during the 16th–17th century; hence spoken word also carries a musical imprint;
- through the natural musicality of oral reading, which is the most powerful intellectual component of the written word;

³⁶ KIVY, P.: Speech, Song, and the Transparency of the Medium: A Note on Operatic Metaphysics. In *The Journal of Aesthetics and Art Criticism*, 1994, Vol. 52, No. 1, p. 68.

³⁷ BOETHIUS, A. M. S.: *De institutione musica*. In GERCMAN, E. V.: *Muzykalnaja Bojeciana*. Sankt-Peterburg : Glagol, 1995, p. 196.

³⁸ KIVY, P.: Speech, Song, and the Transparency of the Medium: A Note on Operatic Metaphysics. In *The Journal of Aesthetics and Art Criticism*, 1994, Vol. 52, No. 1, p. 66.

³⁹ BALTHASAR, H.U.: *The glory of the Lord: a theological aesthetics*. Vol. 1. Edinburgh : T&T Clark, 1982, p. 394.

⁴⁰ OAKES, E.T.: *Pattern of Redemption: The Theology of Hans Urs von Balthasar*. New York : Continuum, 1997, p. 138.

⁴¹ MCLUHAN, M.: *Understanding Media: The Extensions of Man*. New York : McGraw Hill, 1964, p. 22-25.

⁴² See: ZUMTHOR, P.: *La lettre et la voix: De la "Litterature" medievale*. Paris : Editions du Seuil, 1987.

- through the special technique of poetic reading – the „musical tone“, which was perfected as early as the ancient oral reading of poetry (Homer's, for instance) and was used in Shakespeare's century to perform not only his sonnets but also any works of drama.
- The voice is an organic extension of consciousness, a transformed form of physicality, and a „hot“ medium between bodies. Such a medialogic conclusion reinforces the significance and value of acoustic reading.

5. Conclusions

Our research, which aimed to discover the earliest possible stage to initiate the programming of future readers, has outlined a new research field of reading as acoustic-verbal communication. Based on the empirical study conducted we have put forward arguments to support the functional energetics of reading in the context of a physiology of communication mediated by the reading voice and the child's socializing audio-receptive modality. In order to establish the long-term effect of the family practice of the earliest possible communication by means of reading to babies aged between 0 and 1, at least two more follow-up studies need to be conducted among the same empirical group – the first one in two years' time when the babies have reached the age of 3, and the second one in two or three years' time when the children will be 5 or 6 years old and should already be able to read. At this point the use of family diaries and direct behaviour measurement (i.e. video or audio observations) will be recommended. This will aid the collection of operative documentation to enhance the validity of the behavioral guidelines which parents provide to their children, and will possibly lead to more reliable and long-lasting effects of early communication by means of reading aloud.

A theoretical basis necessary to re-examine extant views on laying the groundwork for the so called reading maturity has also been proposed. The theoretical review of the most recent scientific results confirmed the assumption that developing reader attitudes in children depended on the media modalities of the environment in which the babies had been developing immediately after birth. New evidence emerged on the huge potential of the audio environment charged by the energetics of reading aloud or the so-called audio-reading or acoustic reading. The methodological framework of acoustic reading as physiologized and sub-medial communication was also validated and enriched with new parameters i.e. with the reader's voice as a medium and its sub-media – rhythm, metrics, intonation of speech (melody, pause, intensity, tempo, timbre, etc.) as well as with illustrations as sub-media of books and the physical presence of the reader-reciter as a loving adult.

The research is based on the premise of *value conservatism* which at present introduces not only the mother but the whole family as an environment to develop the child's cultural identity through reading. The family has been assigned purposeful pedagogical tasks which are not exhausted at the level of raising and educating the child but, according to Marshall McLuhan's classification, support its early integration into written civilization. All of this is possible while the child is still a „captive audience“ – in the womb, in nappies, being physically taken care of in order to become „a reader“ before knowing about books or his or her own existence. The present study has also armed the family with a technique for *cultural pressure* which must be applied during the first year of the child's life because later on the cultural pressure of modern society will be in a different direction. The cultural pressure on the part of the family will presumably be subconsciously retained in the child's memory and in future will affect its identity by „governing“ it.

Developing reading environment for the future reader changes along with the new views parents adopt as a result of the growing popularity of brain sciences, neurophysiology, embryology, psychology, pedagogy, and the heuristic theories about baby development. It was our responsibility to offer parents the evidence and information necessary to show them

the choices available for designing their progeny's future. It is an optimistic trend that a growing number of parents recognize that the earlier they begin reading to their baby, the more solid its talent as a stalwart reader will be. The generalized properties of the human voice as a medium prove that it has unique energetics for the parent-baby environment – it elevates it with *non-verbal rhetoric*, while reading aloud maintains it in *mode of attention* and transmits the information in an *affectionate sound register*.

The present research has reviewed the topical issue about the interrelation between the media functions of reading and the parents' responsibility for developing a reading child, which will hopefully motivate future research directions in the science of reading. The methodological framework of audio-reading as physiologized and sub-medial communication is applicable in modern family literacy approaches. In terms of its nature, the matter is also open for re-examination of the contribution of the reading voice as a medium for family communication and maintaining a home cognitive environment.

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